UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

MEMORANDUM

SUBJECT: Justification for using US EPA Vapor Intrusion Screening levels for the North Bronson Superfund Site

FROM: Keith Fusinski, PhD Toxicologist US EPA
Superfund Division, Remedial Response Branch #1
Science and Quality Assurance Section

TO: Kathleen Meier, Remedial Project Manager, US EPA
Superfund Division, Remedial Response Branch #1
Remedial Response Section #1

DATE: 11/08/2017

In June 2017, Michigan DEQ (MDEQ) rescinded portions of the May 2013 "Guidance Document for the Vapor Intrusion Pathway". The rescinded portions include:

- Appendix B.3 – Alternative Approach for Investigating Vapors for Petroleum Hydrocarbons Considering Biodegradation, and
- Appendix D – Vapor Intrusion Screening Values

This change is part of a comprehensive update of their Cleanup Criteria Requirements for Response Actions (Part 201). The update, which is expected in early 2018, will publish revised generic cleanup criteria and VI screening levels. In the interim, MDEQ has suggested the use of "Media-Specific Interim Action Screening Levels" as defined by the August 2017 supporting documentation publication entitled "Toxics Steering Group's Recommended Interim Action Screening Levels".

There are a few issues with these screening levels and the supporting documentation;

1.) The screening levels proposed in the "Media-Specific Interim Action Screening Levels" are not consistent with current EPA Vapor Intrusion Screening levels. Generally, the state of Michigan values are based upon an Excess Lifetime Cancer Risk of $1x10^{-5}$ or a non-cancer Hazard Quotient of 1. The values defined in the "Media-Specific Interim Action Screening Levels" do not appear to follow this rule as the proposed screening levels for various chemicals and media are either

equivalent to, well above, or well below US EPAs vapor intrusion screening level at $1x10^{-5}$ or a HQ of 1 without any apparent consistency.

2.) The supporting documentation for the "Media-Specific Interim Action Screening Levels" does not describe how groundwater screening values were derived for the interim screening values. Through conversations between US EPA RCRA program and the Chair of the State of Michigan Toxics Steering Group, it was discovered that the groundwater screening values were derived using an outdated version of the Johnson-Ettinger Model which EPA no longer uses or recommends to use. Recently, US EPA has released an updated version of the Johnson-Ettinger model which MDEQ has been advised of and is currently re-evaluating their interim screening values with.

For these reasons, it is recommended that the vapor intrusion pathway at the North Bronson Site be evaluated using US EPAs default Vapor Intrusion Screening Level Calculator based upon an excess lifetime cancer risk of $1x10^{-5}$ or a non-cancer Hazard quotient of 1, or whichever is most protective. This is the same model which has been used and accepted at other vapor intrusion sites in the State of Michigan.